

ARGUMENTS/REMARKS

Claims 1- 25 are pending. No claims stand allowed.

Claims 1-3, 13, and 19-20 have been amended for further prosecution.

Support for the amendment may be found, for example, page 9, paragraph [0045] to page 10, paragraph [0047] of the present specification, FIGS. 5A, 5B, and 7 and related description of the present specification.

No new matter has been introduced by this amendment.

Rejection of Claims under 35 U.S.C. § 103:

Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suda (US 2004/0123059) in view of Kim et al. (US 2004/0123059). The rejection is respectfully traversed.

Claim 1 defines a method for reading data from a memory card that provides non-volatile data storage formed of a single memory array having an address space defined by a contiguous range of addresses. In the claimed method, as recited in claim 1 as amended, the volume information is stored in a range of addresses that is a part of the contiguous range of addresses, and the contiguous range of the address space is capable of storing either the volume information or user data depending on a configuration of the memory card. Whether the non-volatile data storage has a first configuration having a multiple volume address space corresponding to a first file format or a second configuration having a single volume address space corresponding to a second file format is determined based on the volume information. If the memory card has the first configuration, the memory card is operated in accordance with the first file format by dividing the address space of the non-volatile data storage into a plurality of volumes, wherein each of the plurality of volumes contains the volume information stored in a respective range of addresses therein. If the memory card has the second configuration, the memory card is operated in accordance with the second file format by accessing the entire address space of the non-volatile data storage as the single volume, wherein the range of addresses used to store the volume information in a second and any subsequent volumes under the first configuration is used to store user data under the second configuration.

In the Office Action, the Examiner specifically alleges that Suda's internal register 18 stores the claimed volume information, and that Suda's first storage area 11a and first internal register 12a, second storage area 11b and second internal register 12b, etc. (in FIG. 1 of Suda)

constitute the claimed contiguous address space. The Examiner further alleges that, assuming that Suda's internal registers were not included in the address space defined by the contiguous range of addresses, it would have been obvious to place internal registers within the contiguous range or anywhere in the memory card since it involves a simple relocation of parts. In addition, although the examiner acknowledges that Suda fails to disclose operating the memory card by accessing the entire address space of the non-volatile data storage as the single volume when said determining (b) determines that the single volume address space is present (i.e., the memory card has the second configuration, as amended), the Examiner further contends that Kim teaches providing "an extended flash memory card in which in single mode, both flash cards [a portable flash memory 11a and an external memory card 18a] are seen as a single drive, ... and in separate mode, each flash card is seen as separate drives," and that it would have been obvious to combine Suda with Kim to obtain the claimed invention in order "easy to extend in its memory capacity ... to provide a portable flash memory with extended memory capacity." Applicants respectfully disagree for the reasons set forth below.

Regarding Suda

In Suda, as shown in FIG. 5 thereof, "the first storage area 11a occupies a hexadecimal address from 00000 to 0FFFF. The second storage area 11b occupies an address from 0FFFF to 1FFFF" (page 4, paragraph [0055]). Thus, apparently Suda's internal registers 12 are not a part of the address space defined by the contiguous range of addresses 00000 through xFFFF of the storage area 11 in the case of Suda. Furthermore, since the contiguous range of addresses 00000 to xFFFF are completely occupied by the first, second, and third storage areas 11a, 11b, and 11c (the alleged volumes), there is no space for the internal registers 12a, 12b, and 12c (containing the alleged volume information) in each storage areas. It should be noted that the configuration of Suda's memory card 3 in FIG.5 corresponds to that of in FIG. 1 where each storage area has a corresponding internal register. Therefore, Suda fails to teach or suggest that each of the plurality of volumes contains the volume information stored in a respective range of addresses therein, as a part of the contiguous range of addresses.

Even if it is assumed (for the sake of arguments) that the first storage area 11a, the first internal register 12a, the second storage area 11b, the second internal register 12b, etc. in FIG. 1 thereof should be considered as a contiguous address space, the internal registers 12a, 12b, 12c, 12d are still reserved to store specific system data such as characteristics of the memory card, flag, quantity of the storage area, the storage area number, and the like, for the corresponding

storage areas 11a, 11b, 11c, 11d, respectively (paragraph [0039] of Suda). Since these internal registers are dedicated to those specific system data, user data cannot be stored in the internal registers in Suda, contrary to the claimed invention.

Accordingly, Suda fails to teach or suggest the contiguous range of the address space which is capable of storing either the volume information or user data depending on a configuration of the memory card, each of the plurality of volumes containing the volume information stored in a respective range of addresses therein as a part of the contiguous range of addresses. Suda also fails to teach or suggest operating the memory card in accordance with the second file format by accessing the entire address space of the non-volatile data storage as the single volume, wherein the range of addresses used to store the volume information in a second and any subsequent volumes under the first configuration is used to store user data under the second configuration.

With respect to different file formats, in the claimed invention, in the first configuration, the first file format manages all of the multiple (divided) volumes of the address space, while in the second configuration, the second file format manages the single entire volume of the same address space. In other words, the claimed invention has different configurations of the same address space depending on the file formats. On the other hand, Suda assigns different storage areas to different file formats, for example, the first storage area 11a is managed by a file system A, and the second storage area 11b is managed by a file system B so as to maintain compatibility (paragraph [0062]-[0066] of Suda). That is, in Suda, the storage areas (the alleged multiple volumes) are switched and selectively used in accordance with different file systems, although all of the storage areas in Suda are accessible by switching. Furthermore, although Suda might allegedly determine whether or not a memory card has plural storage areas therein, such determination does not indicate a specific configuration of the memory space corresponding to a specific file format.

Accordingly, Suda also fails to teach or suggest determining, based on the volume information, whether the non-volatile data storage has a first configuration having a multiple volume address space corresponding to a first file format or a second configuration having a single volume address space corresponding to a second file format, and operating (dividing or not dividing) the same address space depending on the file formats as, recited in claim 1 (emphasis added).

Regarding Kim

Kim relates to a portable flash memory with an extended memory capacity. Kim only teaches adding another memory card to a flash memory and operating them as a single drive in order to increase the memory capacity (Kim's single mode). In Kim's separate mode, the additional memory card and the original flash memory are recognized as separate and individual drives. Since Kim's single mode simply increases the memory capacity of the flash memory by adding a memory space, Kim does not teach or suggest using different configuration of the same memory space depending on file formats. Kim also fails to teach or suggest any volume information.

Regarding the Alleged Combination of Suda and Kim

Since Suda's storage areas (the alleged multiple volumes) are switched and selectively used in accordance with different file systems, and Kim fails to teach or suggest using different configuration depending on file formats, as discussed above, the alleged combination of Suda and Kim would only have an additional capacity for each of the storage areas for different file formats, failing to operate the same address space differently (divided multiple volumes or a single volume) depending of the file formats.

Accordingly, Suda, either alone or combined with Kim, fails to teach or suggest (1) the contiguous range of the address space which is capable of storing either the volume information or user data depending on a configuration of the memory card, each of the plurality of volumes containing the volume information stored in a respective range of addresses as a part of the contiguous range of addresses, (2) determining, based on the volume information, whether the non-volatile data storage has a first configuration having a multiple volume address space corresponding to a first file format or a second configuration having a single volume address space corresponding to a second file format, (3) operating the memory card in accordance with the second file format by accessing the entire address space of the non-volatile data storage as the single volume, wherein the range of addresses used to store the volume information in a second and any subsequent volumes under the first configuration is used to store user data under the second configuration, and (4) operating (dividing or not dividing) the same address space of the memory card depending on different file formats, as recited in claim 1.

Other independent claims 13 and 19, as amended, include substantially the same distinctive features as claim 1.

Accordingly it is respectfully requested that the rejection of claims 1, 13, and 19 based on Suda and Kim be withdrawn.

Dependent Claims

Claims 2-12 depend from claim 1, claims 14-18 depend from claim 13, claims 20-25 depend from claim 19, and thus are also patentably distinct from the cited references for at least the same reasons as those recited above for the respective independent claims, upon which they ultimately depend. These dependent claims recite additional limitations that further distinguish these dependent claims from the cited references. For at least these reasons, the dependent claims are not made obvious by the prior art cited in the Office Action.

Conclusion

Applicant believes that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
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